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DEQ Michigan's Nonpoint Source Program

Clean Michigan Initiative
Clean Water Fund Grant

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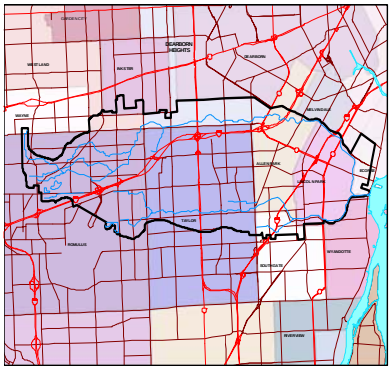
Illicit Connection Elimination in Ecorse Creek

April 1, 2002 through March 31, 2005 (Amended)

The Ecorse Creek Watershed is a 43 square mile tributary to the Detroit River. Land use is highly urbanized (78%), with agricultural use (8%), forest/open rural (12%) and water/wetlands (5%). Ecorse Creek is on the State's list of impaired waters because of poor macroinvertebrate communities and untreated sewage discharges. The major goal of this project was to find and eliminate improper discharges to Ecorse Creek, such as those from improper connections of sanitary sewers to storm sewers or waterways (illicit connections). Performing dye testing of plumbing fixtures and overviews of material storage and handling practices at commercial and industrial facilities were key tools used detect illicit discharges. Other strategies used to identify illicit discharges included outfall surveys, installation of oil/sanitary debris entrapment devices in storm sewers, use of state-of-the-art stable isotope tracer techniques as a method for determining the presence of potable water in natural watercourses, and deployment of self-logging instruments measuring conductivity and temperature in storm sewers. Reductions in the pollutant loadings to Ecorse Creek achieved from removal of the illicit connections and discharges were estimated. The project established successful partnerships with nine watershed communities and Wayne State University.

CMI

Grant Amount: $251,583
Match Funds: $106,290
Total Amount: $357,873



Project Accomplishments:

- 519 facilities inspected:
  - 76 facilities had illicit connections
  - 3 facilities had illicit discharges
- 276 illicit connections and 4 illicit discharges found
- Correction of a sanitary sewer serving 37 homes identified as discharging to the creek
- Partnership with nine of ten communities in the watershed to achieve project goals
- Using stable isotope tracer techniques as a method for determining the presence of potable water in natural watercourses shows promise as a tool to identify illicit discharges
  - Large variations on the stable isotopic composition of stable carbon, hydrogen and oxygen as well as radium isotopes indicated multiple sources of water to the creek.

Annual Pollutant Load Reductions:

- Eliminated 6.2 million gallons of polluted water *per year* from entering Ecorse Creek
- Eliminated 34,909 pounds of polluting materials *per year* from entering the creek

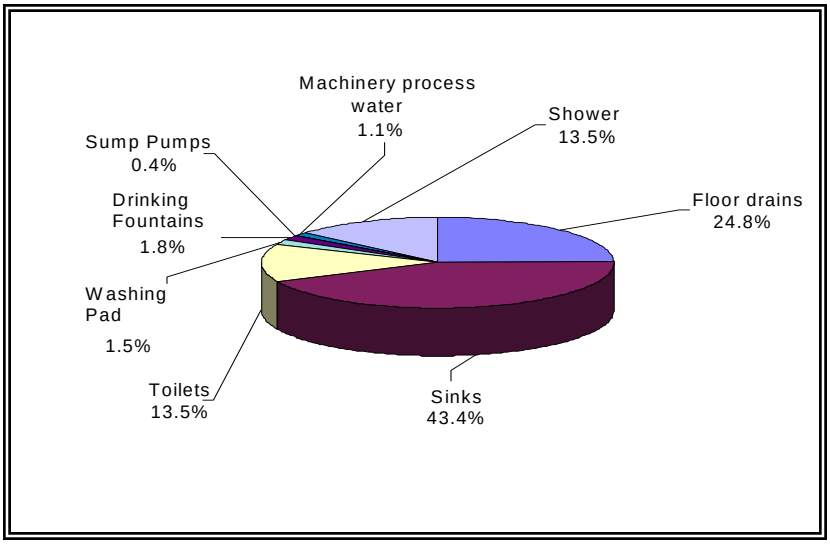
Project Partners

- City of Dearborn Heights
- City of Ecorse
- City of Inkster
- City of Lincoln Park
- City of Romulus
- City of Southgate
- City of Taylor
- City of Westland
- City of Wyandotte
- Wayne County Department of Environment, Facilities Management Division
- Wayne State University
- Michigan Department of Environmental Quality-Water Bureau

Storm sewer outfall discharging sewage

Information and Education Activities:

- **Partnering with the communities, educated city staff about illicit connections, their water quality impact and the importance of finding and eliminating them**
- **Facility inspections allowed staff to interact with the business community on a personal level and educate them on their role in preventing the pollution of Michigan water resources**



Description: Types of Illicit Connections Found in the Ecorse Creek Watershed, January 2003 through December 2004

Pollutant	Estimated amount of polluting material prevented from entering Ecorse Creek annually (Lbs/year)*
Total Suspended Solids	8,462
Surfactants	1,726
Total Organic Carbon	380
Potassium	1,449
Ammonia	252
Biological Oxygen Demand (5 Day)	5,011
Total Solids	17,181
Phosphorus	450
Total Pounds	**34,911**
Flow (gallons/year)	**6,650,904**

*Assumes the removal of all illicit connections identified under this project

Description: Summary of Estimated Pollutant Load Reductions to the Ecorse Creek Resulting from Correction of the Illicit Connections Identified during the period January 1, 2003 through March 31, 2004